Risk Communication

Description

Risk communication is the process of informing people about the hazards of a Superfund site. The purpose of risk communication is to help residents of affected communities to: understand risk assessment and risk management; form scientifically valid perceptions of the likely hazards; and participate in making decisions about how risk should be managed.

The process of informing people about site hazards is a two-way conversation in which the site team informs and is informed by affected community members. This means that the site team must listen to community fears and identify knowledge gaps and desired cleanup strategies. This tool contains techniques for effectively communicating risk to the public.

Required Activity?

No. Although the specific communication techniques contained in this tool are merely suggested, the general process of risk communication can be construed as implied by the NCP. For removal actions, the NCP [at 40 CFR § 300.415(n)(1)] requires that a spokesperson be designated by the lead agency to inform the community of actions taken, respond to inquiries, and provide information concerning the release. For remedial actions, the NCP [at 40 CFR § 300.430(c)(2)(C)] requires that the lead agency provide appropriate opportunities for the community to learn about the site.

Making it Work

When to Use

Risk communication is an ongoing dialogue, the timing of which varies with the situation and should be coordinated with the On-Scene Coordinator (OSC) or Remedial Program Manager (RPM). While CICs do not have total responsibility for risk communication, CICs should be involved in risk communication during all phases of site cleanup. For instance, they could be involved at the site assessment stage asking residents to allow EPA to test their water; at the remedy selection stage helping people understand the technical aspects of the cleanup options; or at construction completion speaking about the future of the site and how the community can return it to productive use. All of these instances require skilled risk communication and a sincere willingness to involve the affected community with decision making about the site.

How to Use

EPA policy encourages maximum community involvement in risk communication because people are entitled to make decisions about issues that directly affect them. Furthermore, experience has shown that greater community involvement leads to greater understanding of the real level of hazard at the site, and greater input from citizens in EPA decision making. The resulting cooperation among all stakeholders increases the credibility of the entire endeavor.

Analyze the audience. One of the most critical components of risk communication is analyzing the audience and the situation. This analysis helps you to understand: (1) what people want to know; (2) what needs to be delivered to ensure they understand and participate; (3) what the best tools are with which to communicate; and (4) what can realistically be done within the constraints of the situations.

Earn trust and establish credibility. Trust and credibility are difficult to obtain and precious to keep. Once lost, they are extremely difficult to regain. For these reasons, the CIC must work carefully and with great sensitivity to win the community's confidence. A credible person

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Seven Cardinal Rules of Risk Communication

1. **Accept and involve the public as a legitimate partner.** The goal is to produce an informed public, not to defuse public concerns.
2. **Plan carefully and evaluate your efforts.** Different goals, audiences, and media require different actions. Analyze the audience; learn what works for each situation.
3. **Listen to the public's specific concerns.** People often care as much about credibility, competence, and empathy as they do about risk levels, statistics, and details.
4. **Be honest, frank, and open.** Trust and credibility are difficult to obtain; once lost they are almost impossible to regain.
5. **Coordinate and collaborate with other credible sources.** Conflicts among organizations makes communication with the public more difficult.
6. **Meet the needs of the *Media*.** The ***Media*** are usually more interested in simplicity than complexity, danger than safety. Make sure they have what they need to portray the situation fairly.
7. **Speak clearly and with compassion.** Never let your efforts prevent acknowledgment of the tragedy of an illness, injury, or death.

See Media, Tab 25

is accurate, keeps promises, and makes sure others do the same. To build such a reputation, the CIC must first listen.

Second, the CIC must react honestly. Where they exist, admit to mistakes and past problems. Let people know EPA is trying to do better with community involvement, and acknowledge how difficult it is for experts to remember that other people need more background information.

Third, the CIC must be patient and compassionate. The CIC needs to imagine the anxiety and trepidation he/she might feel under a similar unknown threat. Impatience can be moderated by remembering that every new audience is hearing this information for the first time, and that many people must hear it more than once.

Fourth, the CIC must consider appearance and dress. CICs should project a neat and professional appearance, while remaining approachable and somewhat similar to the audience.

Fifth, the CIC must get rid of barriers like the podium and the microphone, go into the crowd, and shake hands. It may be helpful to rehearse with a video camera to keep body language and mannerisms positive.

Sixth, the CIC must help colleagues communicate. The CIC should translate over-technical terminology for audiences.

Some examples of how the CIC can earn trust and credibility are: (1) return telephone calls or e-mails within 24 hours (if an answer to the question is not ready, explain what is being done to investigate and when an answer will be ready); (2) at meetings, let the audience know that they are being understood (Repeat questions after they are asked to clarify the intent. Make a list of action items to follow up on as a result of the meeting, as well as any questions that still need to be answered.); (3) explain how information was obtained and

where the community can go for a "second opinion," or to find out more information on their own.

Identify previous community involvement activities. A myriad of scenarios can exist as a result of previous community involvement and risk communication efforts at a site. Evaluating this factor is even more pertinent if the CIC is not entering the process at the outset. If this is the case, it will be necessary to determine not only the level of trust and credibility, good or bad, that others had established with the community, but also the types of activity and involvement that have occurred. The following questions will help the CIC collect initial background information that will help shape the risk message(s):

- **Who are allies?** No matter where the site is in the cleanup process, the CIC should first review the ***Community Involvement Plan*** and then meet with the RPM/OSC and people from other government agencies to discuss events that occurred up until the time of the CIC's involvement, the current situation, and roles and responsibilities. If a meeting is not feasible, the CIC should speak to everyone individually.

See Community Involvement Plans Tab 7

- **Who are the audiences?** Identify those around or near the site with whom no risk communication has yet occurred. Identify what they want to know, how they view the risks from the site, and what has been the level of local involvement.
- **What is the current situation?** After establishing what has been communicated to whom, assess the results and how the public's perceptions have been affected. What were the communities' responses to any communication efforts that took place? How did the media report on the situation? Did any organized citizen groups form? Then, using the information collected, classify the situation. Has there been good communication but a hostile audience, no communication and an apathetic audience, good communication and an interactive audience?

Incorporate risk communication into your *Communication Strategy.* A large part of developing a successful risk communication strategy involves setting realistic goals and measures of success. Risk communication goals will be influenced by those activities that are mandated by applicable laws and regulations, and those that are unique to the specific situation. Be honest with people about the constraints the team faces, and they will be more willing

See Communication Strategies, Tab 3

Potential Risk Communication Limitations

Regulatory requirements—Comply, at a minimum, with CERCLA public participation requirements for Superfund sites. Other laws such as the National Environmental Policy Act (NEPA) may apply as well. (See pipeline timeline foldout at end of Handbook for required and recommended activities.)

Organizational requirements—These requirements can apply, for example, to the amount or type of data available to the public, especially if it relates to legal actions or proprietary information. Be careful not to release or promise to release information that is restricted.

Audience requirements—Sometimes certain audience characteristics may limit the manner chosen to communicate. For example, techniques for communicating with a transient population would differ from those used with a stable one.

to accept those limitations. Promise no more than can be delivered. The box below provides examples of such constraints.

Keep the strategy simple; it should be a guide. Develop an overarching risk communication goal (*i.e.*, "achieve consensus on the remedy"), and then work to select the pipeline-specific interim messages that must be delivered to achieve that goal (*e.g.*, gaining permission to sample drinking water, distributing information on the health effects of the contaminants). Remember that the strategy should not remain static. It will evolve as the site progresses and should be revisited often and modified as necessary.

The first step is to determine the risk message. A risk message should contain no more than three to five points. If the message cannot be articulated that succinctly, then the message should be broken down into an overall message with several interim messages.

The next step is to determine how to deliver the message(s) to meet the goals. A basic template for developing the overall strategy is to follow the questions outlined in the Rutger's University Center for Environmental Communication document, "Ten Questions Environmental Managers Should Ask." The ten questions are summarized below:

1. Why are we communicating?
2. Who are our target audiences?
3. What do our audiences want to know?
4. What do we want to get across?
5. How will we communicate?
6. How will we listen?
7. How will we respond?
8. Who will carry out the plans? When?
9. What problems or barriers have we planned for?
10. Have we succeeded?

Explain the Superfund risk assessment process. The areas of risk science and management can help build a context for the community's understanding of Superfund risks. The Superfund risk assessment estimates the "baseline risks" to human health and the environment present at a site. Let the community know that the risk assessment is tailored. Because each site varies according to the particular contaminants present, each risk assessment is conducted on a site-by-site basis, and estimates the current and possible future risks or hazards if no action were taken at the site.

Put risk in perspective by presenting adequate background when explaining risk numbers. Here are some important considerations:

- **When explaining numbers derived from a risk assessment, explain the risk assessment process before presenting the numbers.** Consider holding a risk assessment workshop to explain the process before the risk assessment is started.
- **Explain and, if possible, show in clear and simple graphics the routes of exposure.** Frequently, the issue is not whether a dangerous substance exists in relatively high quantities, but whether routes of exposure put people at risk.

- **Put the data in perspective.** Avoid the tendency to see risks as "safe" or "dangerous." Instead, explain risk numbers in ranges: 1-10 ppb as "low risk," for example. Show the relationship to similar data and provide a context for reference, such as the regulatory action level and the levels found in other communities. People whose minds are not already made up are very much influenced by how the data are presented.
- **Explain EPA's protective approach to risk assessment and standard setting.** People are often not aware of the extent to which buffers are built into the risk assessments to ensure that they err on the side of caution. The Reasonable Maximum Exposure (RME) as the highest exposure that is reasonably expected to occur at a site needs to be explained to demonstrate the "conservative" nature of the assessment. This technique also helps ensure that the most sensitive, vulnerable individuals in society—children, pregnant and nursing women, immune compromised individuals, and the elderly—are protected.

An important aspect of communicating risk is acknowledging and explaining the inherent uncertainties associated with assessing actual site risks. Failure to do this may result in a loss of credibility with stakeholders.

Five steps are involved in defining or identifying audiences for hazardous waste risk messages:

1. Identify the most contentious or vocal concerns and profile the audiences involved with them;
2. Identify and profile other interested audiences;
3. Discover the informational needs of these audiences;
4. Find key risk communication partners; and
5. Customize messages to audiences.

For most of the concerned public, the personal nature of risk issues and the inherent uncertainty associated with estimating risk can provoke considerable anxiety. Well-managed communication and presentation efforts will help ensure that risk messages are successfully formulated, communicated, and received, and that they result in meaningful actions.

You can best deliver the risk message by selecting appropriate communication tools, addressing communication barriers, and managing difficult situations. See Chapter 10 for a thorough discussion of selecting appropriate communication tools, addressing communication barriers and managing difficult situations.

This section of the Tool presents a discussion of three roles you will play to ensure quality risk communication and community involvement.

Site Team Coordinator

As Site Team Coordinator for risk communications you should work closely with all site and off-site staff to determine and present a unified Agency message about the risks to the community. Coordinating your risk communication efforts with the RPM and OSC will ensure you have the latest information about site activities and any related risk information. It also will enable you to choose those appropriate times when you can arrange for the RPM or OSC to communicate directly with citizens and when you can facilitate personal contact between a community member and someone on the site team.

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Risk Translator

In your risk communication efforts, you also will serve in the role of Risk Translator. This role takes you off the site and into the neighborhoods and living rooms of your communities. Two qualities make you the ideal translator: you know about the risks presented by a site; and you are adept at "speaking the language" of risk. By explaining, sharing, conveying, and providing risk data, literature, sites activities, and other risk information, you will find yourself "translating" the technical information into understandable concepts for the public. As a translator, you also will need to take care to maintain the original meaning of the risks, so as not to simplify or downplay them. And you will assist the community in comparing risks and understanding uncertainty. If successful, your efforts will make you an ideal intermediary between the site staff and the community. Because you understand both the "hazard" learned as Site Team Coordinator and the "outrage" from your experiences as Community Involvement Liaison (described below), you will be able to help the community appropriately calibrate their level of outrage, which is the ultimate goal of risk communication.

Community Involvement Liaison

Your role as Community Involvement Liaison will involve you most directly in the community. You will balance your role as Site Team Coordinator (bringing information to the public) by obtaining feedback from the community and providing it to the site team. This role requires that you revisit all of the tools and resources at your disposal to serve the risk communication needs of each community. As liaison, you will meet with citizens individually whenever possible. You also will want to work with the ***Community Advisory Groups*** at your sites to ensure the inclusion and involvement of your most active community players and to help them find the resources they need to help you communicate risk in the community; these resources might include risk literature, site updates, and advice on applying for ***Technical Assistance Grants*** to hire risk specialists and consultants.

See Community Advisory Groups, Tab 4 ; Technical Assistance for Communities, Tab 41

Tips

- Plan all risk communication carefully by integrating the risk assessment and management activities with other community involvement activities.
- Coordinate your efforts with those of other site members, including the RPM and OSC.
- Make use of outside experts when appropriate, but continue to serve as the lead contact point for the communication of technical risk information.
- Remember that no other CIC arena is more important than seeing that citizens' fears, questions, and concerns are managed on their terms, not yours.
- Track your progress and evaluate your risk communication strengths and areas for improvement.

Related Tools/Resources in the Toolkit

- Communications Strategies, Tab 3
- Community Groups, Tab 4
- Community Interviews, Tab 5
- Community Involvement Plans, Tab 7
- Community Profile, Tab 8

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Attached Items Within this Tool

- Attachment 1: Internet Resources for CICs
- Attachment 2: Internet Resources Available to the Public
- Attachment 3: Useful Terms and Definitions for Explaining Risk

Outside Sources of Information

- *Risk Assessment Evaluating the Effects of Toxic Substances. Hazardous Substance Research Centers.* Environmental Science and Technology Briefs for Citizens. Issue 01-97.

Attachment 1: Internet Resources for CICs

Risk Communication

www.riskworld.com/nreports/1996/risk_rpt/html/nr6aa038.htm

Workshop Proceedings on Risk Communication

web.health.gov/environment/Casestudies/csapp3.htm

Case Study in Health Risk Communication

www.fplc.edu/risk/vol5/winter/trauth.htm

A Primer on Health Risk Communication Principles and Practices

www.atsdr.cdc.gov/risk/riskprimer/index.html

Risk Communication: Notes from a class by Dr. Peter Sandman

www.psandman.com/articles/risk.htm

Attachment 2: Internet Resources Available to the Public

EPA Superfund Information

www.epa.gov/superfund

Risk Assessment for Toxic Air Pollutants: A Citizen's Guide

www.epa.gov/oar/oaqps/air_risc/3_90_024.html

Integrated Risk Information System

www.epa.gov/iris/

Risk Assessment as a Major Tool for EPA Policy Decisions

www.riskworld.com/Profsoci/sra/newsltrs/2ndqu95/ps5ae217.htm

A Citizen's Guide to EPA's Superfund Program

www.epa.gov/reg3hwmd/super/sfguide.htm

Attachment 3: Useful Terms and Definitions for Explaining Risk

The glossary is intended to assist readers in understanding terms used by the U.S. Environmental Protection Agency. The definitions are not all-encompassing and should not be construed as official EPA definitions.

Acute exposure: Exposure to one dose or multiple doses within a short time - 24 hours to a few days.

Acute Toxicity: A term used to describe immediate toxicity. Its former use was associated with toxic effects that were severe (e.g., mortality) in contrast to the term "subacute toxicity" which was associated with toxic effects that were less severe.

Adverse Health Effect: Any change resulting in anatomical, functional, or psychological impairment that may affect the performance of the whole organism.

Aquifer: An underground geological formation, or group of formations, containing usable amounts of groundwater that can supply wells and springs.

Asbestosis: Scarring of the lung from inhaling airborne asbestos fibers. This disease is often fatal.

Bioaccumulate: To build up a large amount of a substance in the body by ingesting small amounts over an extended period of time.

Carcinogen: Any substance that can cause or promote cancer.

Carcinogenesis: The origin or production of cancer (very likely a series of steps). The carcinogenic event so modifies the genome and/or other molecular control mechanisms in the target cell that they can give rise to a population of altered cells.

Chronic Exposure: Multiple exposures occurring over an extended period of time, or a significant fraction of the animal's or individual's lifetime.

Chronic Toxicity: A term used to describe delayed toxicity. However, the term "chronic toxicity" also refers to effects that persist over a long time, whether or not they occur immediately or are delayed.

Congenital: A condition existing from birth. Congenital conditions are acquired during development in the womb. They are not inherited from the parents.

Cohort Study: An epidemiologic (human) study that observes subjects in different exposed groups and compares the incidence of symptoms. Although ordinarily prospective in nature, such a study is sometimes carried out retrospectively, using historical data.

Cumulative Risk Assessment: A process that involves the consideration of the aggregate ecologic or health risk to a target organism caused by the accumulation of risk from multiple stressors (any physical, chemical, or biological entity that can induce an adverse response) and multiple pathways of exposure.

Developmental Toxicity: Adverse effects on the developing organism (including death, structural abnormality, altered growth, or functional deficiency) resulting from exposure prior to conception (in either parent), during prenatal development, or postnatally up to the time of sexual maturation.

Dose: Administered dose is the mass of a substance given to an organism and in contact with an exchange boundary (e.g., gastrointestinal tract) per unit body weight, per unit time (e.g., mg/kg-day). Absorbed dose is the amount of a substance penetrating the exchange boundaries of an organism after contact.

Dose Response: How a biological organism's response to a toxic substance quantitatively shifts as its overall exposure to the substance changes (e.g., a small dose of carbon monoxide may cause drowsiness; a large dose can be fatal).

DNA (deoxyribonucleic acid)**:** The carrier of genetic information in cells.

Ecology: The relationship of living things to one another and their environment, or the study of such relationships.

Endocrine Disruptors: Exogenous (outside the body) chemical agents that interfere with the production, release, transport, metabolism, binding, or elimination of the natural hormones in the body, which are responsible for the maintenance of homeostasis and regulation of developmental processes.

Enteric: Relating to the intestines, alimentary.

Exposure: Contact of an organism with a chemical or physical agent. Exposure is quantified as the amount of the agent available at the exchange boundaries of the organism (e.g., gut, skin, lungs) and available absorption.

Exposure Assessment: The determination or estimation (qualitative or quantitative) of the magnitude, frequency, duration, and route of exposure.

Ground Water: Water that moves slowly underground in an aquifer.

Hazardous Waste: Waste defined by the Resource Conservation and Recovery Act (RCA) as those that may cause, or significantly contribute to illness or death, or that may substantially threaten human health or the environment when not properly controlled.

Health Advisory: An estimate of acceptable drinking water exposure to a chemical substance based on health effects information. A Health Advisory is not a legally enforceable standard, but serves as technical guidance to assist federal, state, and local officials.

Incidence: The number of cases of a disease or occurrence of an effect within a specified period of time.

Integrated Pest Management (IPM): A mixture of chemical and other non-pesticide methods to control pests.

Malignant: Tending to become progressively worse and to result in death if not treated; having the properties of anaplasia, invasiveness, and metastasis.

Maximum Contaminant Level (MCL): Maximum permissible level of a contaminant delivered to any user of a public drinking water system. An MCL is an enforceable federal regulation.

Metastasis: The transfer of disease from one organ or part to another one not directly connected with it.

Mitigation: Measures taken to reduce adverse impacts on the environment.

Morbidity: Sickness.

Mortality: Death.

Particulate Matter: Airborne materials that can, depending on their size and composition, lodge in various areas of the respiratory tract.

Pathogens: Microorganisms that can cause disease in other organisms or in humans, animals, and plants (e.g., bacteria, viruses, or parasites) found in sewage, in runoff from farms or rural areas populated with domestic and wild animals, and in water used for swimming. Fish and shellfish contaminated by pathogens, or the contaminated water itself, can cause serious illness.

Restoration: Measures taken to return a site to pre-violation conditions.

Risk: A measure of the probability that damage to life, health, property, and/or the environment will occur as a result of a given hazard.

Risk Assessment: The determination of the kind and degree of hazard posed by a specific pollutant, and the present or potential health risk that exists due to that agent. Major steps may include:

- Hazard Identification: **Determines whether exposure to a substance can cause cancer, birth defects, or other adverse health effects.**
- Dose Response Assessment: **Determines the possible severity of adverse health effects at different levels of exposure.**
- Exposure Assessment: **Estimates the amount of contact individuals within a population—including potentially sensitive groups, such as children—could have with the substance.**
- Risk Characterization: **Combines the information in the first three steps to determine the level of potential risk to humans and the environment.**

Risk Management: The process of evaluating and selecting alternative regulatory and non-regulatory responses to risk. The selection process necessarily requires the consideration of legal, economic, and behavioral factors.

Smelter: A facility that melts or fuses ore, often with an accompanying chemical change, to separate its metal content. Emissions cause pollution. "Smelting" is the process involved.

Solvent: A liquid capable of dissolving a material and holding it in solution. For example, paint remover is a paint solvent.

Superfund: Federal authority, established by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, to respond directly to releases or threatened releases of hazardous substances that may endanger health or the environment.

Surface Water: Water at the surface of the earth, including lakes, rivers, ponds, and streams. It is the source of much ground water through the larger hydrologic cycle as water moves from the surface to aquifers below ground.

Toxic: Poisonous

Toxicology: The study of the adverse effects of chemicals in living organisms.

Volatile: Any substance that evaporates readily.